

CLAIMS

What is claimed is:

1. A transceiver module for use in a fiber-optic network system comprising:
a transceiver module casing;
a transmitter optical subassembly disposed in the transceiver module casing,
wherein the transmitter optical subassembly includes a header assembly having
enclosed therein:
a thermoelectric cooler (TEC); and
an externally modulated laser (EML) for transmission of optical data;
and
a receiver subassembly disposed in the transceiver module casing.
2. A transceiver module as set forth in claim 1 wherein the transmitter optical subassembly comprises a platform wherein a portion of the platform is exposed external to the transmitter optical subassembly, and wherein the platform comprises a conductive pathway extending through the platform.
3. A transceiver module as set forth in claim 2 wherein the conductive pathway comprises a plurality of isolated traces, wherein the plurality of isolated traces is of a sufficient number to at least provide control signals to an integrated circuit laser driver.
4. A transceiver module as set forth in claim 2, wherein the conductive pathway forms a transmission line, wherein the transmission line is adapted to match the impedance of a component connected to a first end of the conductive pathway with a source intended to drive

the component wherein the source is intended to be connected to a second end of the conductive pathway.

5. The transceiver module as set forth in claim 4, wherein the transmission line is a 25 ohm transmission line.

6. The transceiver module as set forth in claim 4, wherein the transmission line is a 50 ohm transmission line.

7. A transceiver module as set forth in claim 1 further comprising a module circuit board disposed in the transceiver module casing.

8. A transceiver module as set forth in claim 7, wherein the transmitter optical subassembly and the receiver optical subassembly are electrically coupled to the module circuit board.

9. A transceiver module as set forth in claim 8, wherein the transmitter optical subassembly and the receiver optical subassembly are electrically coupled to the module circuit board through a flexible circuit board.

10. A transceiver module as set forth in claim 1 wherein the EML is optimized to operate at an elevated temperature above an ambient temperature in which the transceiver module is intended to operate.

11. A transceiver module as set forth in claim 1 further comprising a bail release coupled to an anterior end of the transceiver module casing.

12. A transceiver module as set forth in claim 1, wherein the transceiver module is constructed so as to comply with the XFP Multi Source Agreement.

WORKMAN NYDEGGER
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

13. A method of making a transceiver module comprising;
- providing a transceiver module casing;
- disposing a transmitter optical subassembly in the transceiver module casing,
- wherein the transmitter optical subassembly includes a header assembly having enclosed therein:
- a thermoelectric cooler (TEC); and
- an externally modulated laser (EML) for transmission of optical data;
- and
- placing a receiver subassembly in the transceiver module casing.
14. A method as set forth in claim 13 further comprising installing a module circuit board in the transceiver module casing.
15. A method as set forth in claim 14 further comprising electrically connecting the transmitter optical subassembly and the receiver subassembly to the module circuit board.
16. A method as set forth in claim 15 wherein electrically connecting is accomplished by using at least a flexible printed circuit board.
17. A method as set forth in claim 13 further comprising optimizing the EML for use in applications where the EML is intended to be operated at an elevated temperature above some ambient temperature in which the transceiver is intended to be operated.

18. A method as set forth in claim 13 further comprising attaching a bail release to an anterior end of the transceiver module.

19. A method as set forth in claim 14 further comprising forming a pluggable edge connector on a posterior end of the module circuit board.

20. A method as set forth in claim 13, wherein the transmitter optical subassembly comprises a platform that extends external to the transmitter optical subassembly, further comprising forming an impedance matching transmission line on the platform.

21. A transceiver module for use in a fiber-optic network system comprising:
- a modular transceiver module casing;
 - a transmitter optical subassembly disposed in the transceiver module casing, wherein the transmitter optical subassembly includes a header assembly having enclosed therein an externally modulated laser (EML) for transmission of optical data, the EML being adapted for operation at a temperature elevated with respect to an ambient temperature in which the transceiver module operates; and
 - a receiver subassembly disposed in the transceiver module casing.
22. A transceiver module as set forth in claim 21, wherein the transceiver module is capable of use in a dense wavelength division multiplexing application.
23. A transceiver module as set forth in claim 21, wherein the header assembly further has a thermoelectric cooler (TEC) that is used to stabilize the wavelength of light generated by the EML.
24. A transceiver module as set forth in claim 21, wherein the EML is cooled only passively.
25. A transceiver module as set forth in claim 21, wherein the transceiver module is constructed so as to comply with the XFP Multi Source Agreement.

26. An optical transceiver, comprising:

a pluggable transceiver module casing that complies with the XFP Multi Source Agreement;

a transmitter optical subassembly disposed in the transceiver module casing, wherein the transmitter optical subassembly includes a header assembly having enclosed therein an externally modulated laser (EML) for transmission of optical data; and

a receiver subassembly disposed in the transceiver module casing.

27. An optical transceiver as set forth in claim 26, wherein the header assembly further has enclosed therein a thermoelectric cooler for dissipating heat generated by the EML.